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ASSESSMENT OF ENDOTHELIAL FUNCTION, NUMBERS OF CIRCULATING ENDOTHELIAL PROGENITOR CELLS, SOLUBLE ADHESION MOLECULES AND SERUM LEVELS OF INFLAMMATORY MARKERS SUGGEST THE ABSENCE OF RELEVANT ENDOTHELIAL DYSFUNCTION IN CONTEMPORARY PATIENTS WITH REPAIRED COARCTATION

ACC Poster Contributions
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Session Title: Aortic Issues in Marfan Syndrome and Adult Congenital Heart Disease
Abstract Category: Adult Congenital Heart Disease
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Background - Arterial hypertension is prevalent and has been linked to endothelial dysfunction after repair of aortic coarctation (CoA). We investigated endothelial function, the number of circulating endothelial progenitor cells (EPC) and serum markers related to endothelial function in contemporary CoA patients.

Methods - We recruited 20 CoA patients (mean age 35±13 yrs, 16 males , mean age at surgery 7±6 yrs , 10 with arterial hypertension requiring antihypertensive treatment) without residual stenosis and 22 age matched healthy controls (age 30±11 yrs, 14 males). All subjects underwent assessment of endothelial function by peripheral arterial tonometry, measurement of EPCs (using flow cytometry) and assessment of serum markers of endothelial function and inflammatory markers linked to endothelial dysfunction.

Results - Endothelial function was not significantly impaired in patients (RH-Index 1.96±0.32 vs. 1.77±0.48, p=0.82). EPCs were not significantly reduced in patients (see Table 1). Levels of sVCAM, sICAM, IL-1, IL-8 MCP-1 and VEGF were similar in both groups (p>0.05 for all).

Conclusion - In contrast to previous studies no abnormal forearm vasodilatory response could be demonstrated in contemporary CoA patients. Numbers of EPC, soluble forms of adhesion molecules and levels of inflammatory markers were not significantly different between patients and controls. Further studies are required to delineate the etiology of arterial hypertension in the absence of residual stenosis.

Table 1

	Control (% LMCs)	CoA (% LMCs)	p Value
CD34+	0.1595±0.0703	0.1569±0.0875	0.6614
CD34+/KDR+	0.0124±0.0116	0.0063±0.0051	0.0703
CD34+/AC133+	0.1074±0.0420	0.1290±0.0751	0.4654
CD34+/AC133+/KDR+	0.0082±0.0066	0.0079±0.0127	0.3209
CD34+/CD45-	0.1068±0.0364	0.0961±0.0683	0.4565